Ohio Environmental Protection Agency

OHIO ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF ENVIRONMENTAL RESPONSE AND REVITALIZATION

PRELIMINARY ASSESSMENT APPROVAL FORM

for

PURITAN LAUNDRY

Tuscarawas County

U.S. EPA ID OHN000506120

Ohio EPA Project ID 479001337003

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Ohio Environmental Protection Agency

Preliminary Assessment Report for Puritan Laundry

Division of Environmental Response and Revitalization

June 2016

PRELIMINARY ASSESSMENT (PA) REPORT

For

PURITAN LAUNDRY
243 6th Street Southwest
New Philadelphia, Tuscarawas County, Ohio
U.S. EPA ID: OHN000506120

OHIO ENVIRONMENTAL PROTECTION AGENCY
Division of Environmental Response & Revitalization
Lazarus Government Center
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Columbus, Ohio 43216

June 2016

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APPENDICES

1.0 EXECUTIVE SUMMARY

The Ohio Environmental Protection Agency (Ohio EPA) Division of Environmental Response and Revitalization (DERR) entered into a cooperative agreement with the United States Environmental Protection Agency (U.S. EPA) Region V to conduct a Preliminary Assessment (PA) of the former Puritan Laundry (Puritan), New Philadelphia, Tuscarawas County, Ohio (Figure 1 Site Location Map). The purpose of this report is to evaluate site history and summarize available data to determine if further action and sampling is necessary.

A Pre-CERCLA Screening (PCS) report was completed by Ohio EPA and submitted to U.S. EPA on October 21, 2015.

2.0 SITE BACKGROUND

2.1 Site Description

The former Puritan site is a 2.42 acre property located at 243 6th Street SW, New Philadelphia, Tuscarawas County, Ohio (Figure 2 Site Features map). The site is situated approximately 1760 feet to the northwest and hydraulically up-gradient of the New Philadelphia well field. The well field consists of four (4) groundwater supply wells whose source water, approximately 4.5 million gallons per day, is drawn from a high yielding, 2000 gallons per minute, unconfined glacial outwash aquifer comprised of sand and gravel deposits located along the Tuscarawas River. The current property owner is the Hicks Revocable Trust.

2.2 Site History

The Puritan Laundry and Dry Cleaning Company operated from the early 1900s to 1985. On August 30, 1985, a fire destroyed the Puritan Laundry building and its contents. According to an August 1987 U.S. EPA Potentially Responsible Party Search Report (Jacobs Engineering Group Inc.) completed for the New Philadelphia Well Field Site, the president of Puritan, William Hicks (deceased former owner and operator), stated that the facility used approximately 50 gallons of tetrachloroethylene (PCE) annually from 1975 to 1985. The company received the solvent in cartridges from M&L Company in Akron, Ohio and from Ashland Refinery. Prior to using PCE, Puritan Laundry used Stoddard solvent (mineral spirits) which was delivered in tanker trucks and pumped into drums.

Soil and ground water at the Puritan site have been impacted by the release of PCE. The date(s) and quantity of the release are unknown, but Ohio EPA sampling data has identified the site as the source of both on-site and off-site ground water contamination. The high-yield aquifer that underlies the site and surrounding region is a natural resource that has been impacted by the release. On-site concentrations of PCE in the aquifer are as high as 434 µg/L.

The Maximum Contaminant Level (MCL) for PCE is 5µg/L. Off-site concentrations of PCE in the aquifer range as high as 638 µg/L. Ground water data indicates that the PCE plume generated by the release has migrated and reached the ground water production wells of the city of New Philadelphia Well Field, located approximately 1760 feet to the southeast. The users of this public drinking water system are potential receptors; persons exposed to contaminated soils at the Puritan site are also potential receptors. The site is not fenced and access to the property is not restricted.

Volatile organic compounds (VOCs) were discovered in the New Philadelphia well field in 1981. In 1984, it was determined that two separate VOC contaminant plumes, a northern and a western plume, were both contributing to ground water contamination within the city's well field. Chemicals of concern within the northern plume consisted primarily of trichloroethylene (TCE) and its breakdown products and the chemicals of concern within the western plume were identified primarily as tetrachloroethylene (PCE) and its breakdown products. In 1984, Joy Technologies (Joy) was identified as the source of the northern VOC plume and the company entered into an Administrative Order with Ohio EPA in 1990, which included an agreement for Joy to install and operate an air stripper system at the New Philadelphia well field in order to remove contaminants from the public water supply. The air stripper also removes contaminants entering the well field from the western VOC plume.

2.3 Site Assessment History

A Pre-CERCLA Screening (PCS) report was completed by Ohio EPA and submitted to U.S. EPA on October 21, 2015.

2.4 Other Clean-up Authorities

Ohio EPA conducted sampling investigations in 1984, 1985, 2000 and 2001 to locate the source of the PCE contamination. Piezometers at the New Philadelphia Well Field, just west of the Water Treatment Plant, were most recently sampled in 2014.

2.4.1 Previous Site Work

Since the initial detection of PCE over 30 years ago, various site investigations have been conducted by State and local authorities to identify the source(s) of contamination to the well field. A summary of the more recent activities is provided below.

<u>1981</u>

In 1981, the city of New Philadelphia well field began detecting VOCs in its production wells. The primary contaminant was trichloroethylene (TCE), but additional compounds include 1,1,1-trichloroethane (1,1,1-TCA); 1,1-dichloroethene (1,1,-DCE); cis- and trans-

1,2-dichloroethylene (1,2-DCE); and PCE.

1984

An investigation was conducted to attempt to locate the source of ground water contamination not associated with Joy Technologies. As part of the investigation, 14 test pits were installed at the Gradall facility, located to the west of the well field and southwest of the Puritan site. The test pits were installed by Gradall at the request of Ohio EPA, and were excavated to a depth of 1 to 2 feet below the water table. Analysis of water samples collected from the bottom of the excavations indicated detections of TCA, 1,1-Dichloroethane (DCA), trans 1,2-DCE, TCE and vinyl chloride. The summary and conclusions from the 1984 report indicated that the western contaminant plume was migrating through the Gradall property from a source up-gradient. This contaminant plume was impacting the New Philadelphia municipal wells southeast of the Gradall facility. Based on the results it was concluded that city's production wells was enhancing the ground water gradients and increasing the rate of contaminant flow through the Gradall property.

1985

At the request of Ohio EPA, Gradall installed three monitoring wells at their facility. The ground water sampling showed that MW-1, located up-gradient of the manufacturing facility and on the western corner of the property, was contaminated with a variety of VOCs. MW-2, located to the southeast and down-gradient of the property, had low levels of VOCs similar to those detected in the city well field. MW-3, located to the east of the facility along the eastern edge of the property, did not contain detectable levels of contaminants. The conclusion from the investigation was that the source of contamination for the western plume was up-gradient of the Gradall facility and the contaminants were migrating with the natural ground water flow under the Gradall property.

2000

Ohio EPA installed Geoprobe® borings along Mill Avenue directly north of the Gradall facility, and along the edge of the city well field directly east of Gradall. Three discrete ground water samples were collected from each of the nine borings and submitted for laboratory analysis for VOCs. Results of the investigation indicated that the highest concentration of ground water VOCs (specifically, PCE at 494 µg/L) was found at boring GP-5A, located north (and upgradient) of the Gradall facility along Mill Avenue. PCE was also detected in five additional borings. The data indicated that the contamination present in ground water beneath the Gradall property was migrating from a source, or sources, upgradient of Gradall.

Results from this 2000 investigation suggested a possible link between the western plume of contamination at the New Philadelphia Well Field and the former Puritan site. The Puritan site is located at the corner of Mill Avenue and Bank Lane, approximately 1760 feet northwest and up-gradient of the city well field. A summary of the laboratory analytical results for the Ohio EPA Geoprobe investigation conducted in 2000 can be found in Table 2. A sample location map (Figure 8) is with the table.

2001

Ohio EPA contracted the drilling of 18 cone penetrometer and 7 direct-push borings to perform additional in-situ ground water sampling (Figure 5, 6, 7). Twelve borings were located on the eastern end of the Gradall property and at the city well field. Seven of the borings were located on or near the former Puritan Laundry property. Ground water results provided additional data defining the horizontal and vertical extent of the PCE plume. Samples collected north and west of the Puritan Laundry property had no PCE detections. Three shallow soil samples collected on the Puritan property found PCE concentrations as high as 214 µg/kg. Data generated during this investigation provided further indication that the Puritan Laundry property was the source of the western plume. The data from this investigation is included in Table 1, Ground Water Analytical Results New Philadelphia West Plume Investigation New Philadelphia.

2014

Ohio EPA completed follow-up groundwater monitoring of 5 piezometers located along the western border of the city of New Philadelphia's well field property, approximately 400 feet west of the city's public water wells and directly to the east of the Gradall industrial property. Results of this monitoring demonstrated that PCE concentrations ranged as high as 132 µg/L in the upper ground water zone (20 foot depth) and as high as 66.5 µg/L in the lower ground water zone (40 foot depth).

2015

An October 19, 2015 phone interview with Ed Wilson, Water Superintendent – city of New Philadelphia verified that, although concentrations in the raw water supply have decreased since they were first detected in the 1980s, PCE is still detected as a contaminant within the city's raw water supply and is removed through the treatment plants' air stripper system prior to distribution.

3.0 SITE GEOLOGY, HYDROGEOLOGY AND LAND USE

3.1 Geology and Hydrogeology

The subsurface geologic materials in the vicinity of the former Puritan site consist of a thick unit of unconsolidated sand and gravel deposits of the Tuscarawas River valley alluvial aquifer. The unit is capped by finer textured deposits of silt, fine sand, and trace amounts of clay. The finer-grained deposits typically transition to the coarser sand and gravel at depths between 10 and 20 feet below ground surface. Under the nearby Joy Technologies facility, the cumulative thickness of the unconsolidated deposits was measured at approximately 200 feet based on the installation of deep monitoring wells. At the former Puritan site, which is located on a terrace 15-20 feet higher in elevation than the well field, ground water occurs at depths of approximately 30 feet below ground surface. The depth to water becomes shallower in the direction of the New Philadelphia well field, where it is approximately 15 feet below ground surface. Well logs are located in Appendix B.

Pumping tests completed at the New Philadelphia well field in 1987 indicated very high values of hydraulic conductivity (K) for the aquifer, on the order of 1.38×10^{-1} cm/sec. The ground water flow velocities below the Joy facility have been calculated to be on the order of 850 feet/year.

The bedrock that lies beneath the thick alluvial aquifer consists of shales, sandstones, conglomerates, claystones, coals, iron ores, and limestone of the Pennsylvanian-aged Allegheny and Pottsville formations.

3.2 Land Use and Demographic Information

Tuscarawas County is known primarily for industry and farming; however, woodland is one dominant land use. Other land uses include residential and recreational development. Industry is diversified and includes manufacturing of steel, chemicals, and vitrified clay products.

New Philadelphia is both the largest city and the county seat of Tuscarawas County. It is located 71 miles south of Cleveland and 119 miles northeast of Columbus on the Tuscarawas River. It was established in 1804. New Philadelphia is a mixture of residential, commercial and light industrial land use. It is primarily surrounded by farmland and pastures.

At the time of the 2010 census, there were 17,288 people, 7,282 households, and 4,541 families residing in the city. The population density was 2,103.2 inhabitants per square mile

(812.1/km^2). There were 7,909 housing units at an average density of 962.2 per square mile (371.5/km^2). The racial makeup of the city was 94.0% White, 1.2% African American, 0.4% Native American, 0.6% Asian, 0.4% Pacific Islander, 1.6% from other races, and 1.8% from two or more races. Hispanic or Latino of any race was 4.2% of the population. The median income for a household in the city was $33,235, and the median income for a family was $42,896.

4.0 MIGRATION PATHWAYS

4.1 Soil Exposure Pathway

The soil exposure pathway is not believed to be a major pathway of concern. While access to the site is uncontrolled, there are no workers or residents on-site. Three shallow soil samples collected on the Puritan Laundry property found PCE concentrations as high as 214 µg/kg. VOCs are the only identified site contaminants and are not typically a concern for direct contact exposure. While VOCs were detected in samples collected, the full extent of soil contamination is unknown. On-site VOC contaminated soils are believed to be the source of VOC contamination in groundwater. Vapor migration from source soils has not been evaluated. Approximately 7,510 residents live within a one mile radius of the site. Appendix C contains the Geographic Information System Data and Maps for the Target Limit Distance Maps.

4.2 Ground Water Pathway

Ground water is the primary pathway of concern due to known VOC ground water contamination affecting a large area including New Philadelphia's well field. The Puritan Laundry site is located within New Philadelphia's wellhead protection area (WPA). As of October 2015, PCE is still being detected within the city's raw water supply and is removed through the treatment plants' air stripper system prior to distribution. New Philadelphia obtains its drinking water from four wells screened in the unconsolidated sand and gravel aquifer. Three community water systems are located within the 4-mile target distance limit. These include the New Philadelphia which serves an approximate population of 17,056 and is located less than 0.5 miles from the Puritan Laundry site; Wilkshire Hills Community Water System which serves an approximate population of 498; and the city of Dover which serves an approximate population of 12,826.

4.3 Surface Water Pathway

The surface water exposure pathway is not a major pathway of concern. The Tuscarawas River borders New Philadelphia's well field. Ohio EPA has no direct data regarding whether the well field and the Tuscarawas River are hydraulically connected. However, based on data from very similar hydrogeologic settings, including other locales along the Tuscarawas River, it is safe to

assume there is at least a moderate degree of connection between the river and the aquifer. There are no downstream surface water intakes on the Tuscarawas River within the 15-mile target distance limit. One state endangered species, the Plains Clubtail (*Gomphus externus*) a species of dragonfly, is located within the 15-mile target distance limit downstream of the Puritan Laundry site.

4.4 Air Pathway

Vapor intrusion is currently not scored under the Hazard Ranking System. However, vapor intrusion is a potential exposure pathway which could potentially affect off-site receptors. Elevated levels of PCE are present in the ground water and in on-site soils. Static water level in the well field is approximately 15 feet below ground surface.

5.0 SUMMARY

Sampling data from previous investigations indicate contaminants have impacted both the soil on-site and the ground water both on-site and off-site. Additional sampling is necessary to further characterize the nature and extent of contamination and to ensure off-site receptors are not being impacted.

6.0 REFERENCES

Division of Environmental Response and Revitalization Files. Ohio EPA, DERR, SEDO

Division of Drinking and Ground Waters Files. Ohio EPA, DDAGW, SEDO

Pre-CERCLA Screening Checklist/Decision Form completed by Ohio EPA and submitted to U.S. EPA October 21, 2015.

Appendix A

Figures and

Corresponding Anlaytical

Data Tables

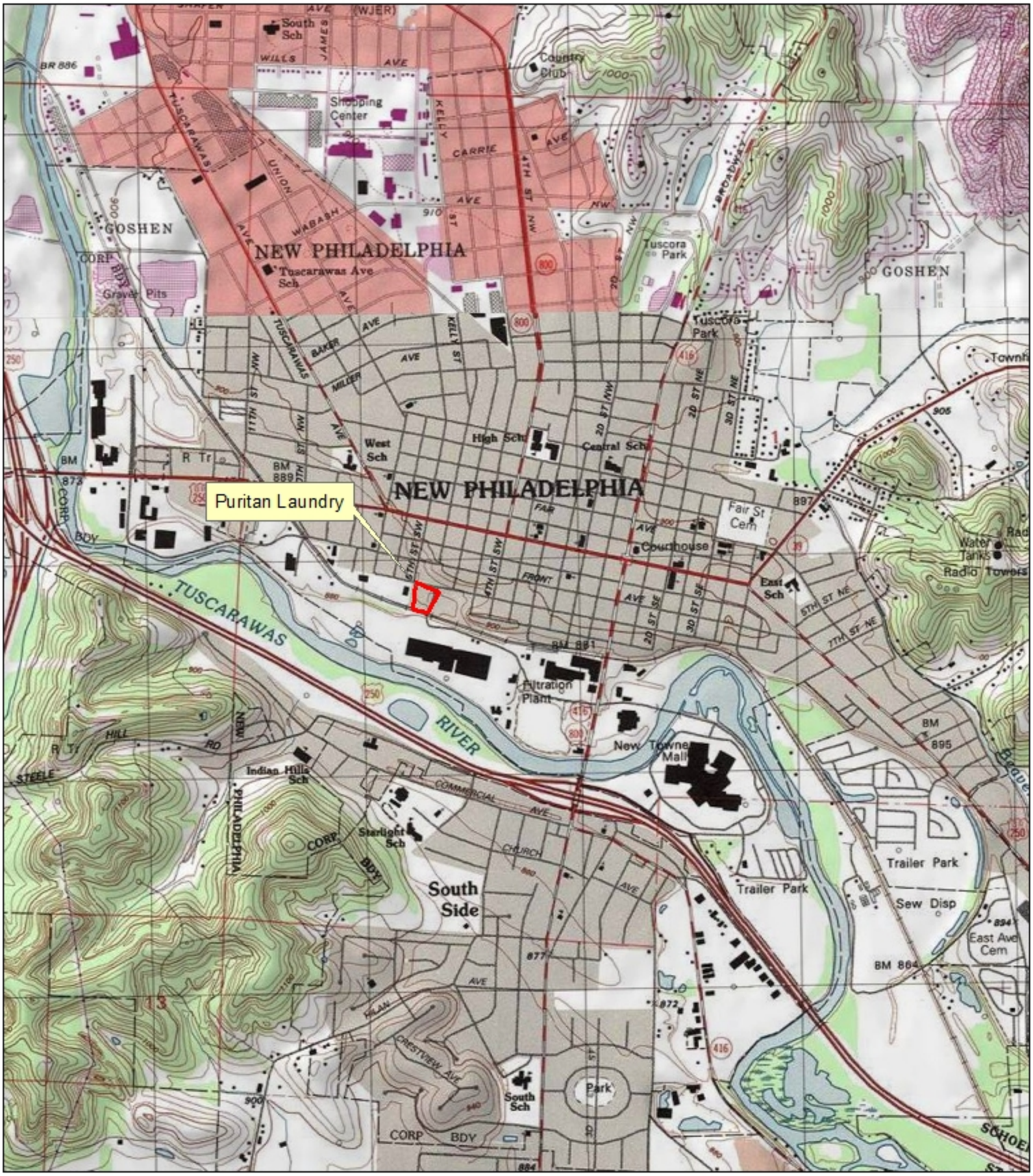


Figure 1: Site Location Map
Puritan Laundry
New Philadelphia, OH Tuscarawas County
U.S. Topographic Map 1:24000 feet

Ohio Environmental Protection Agency

Figure 2: Site Features Map
Puritan Laundry
New Philadelphia, OH Tuscarawas County

0 100 200 400 600 800
Feet

N

ArcGIS Map Service Internet
Server: http://services.arcgisonline.com/arcgis/services
Name: World_Imagery

Ohio Environmental Protection Agency

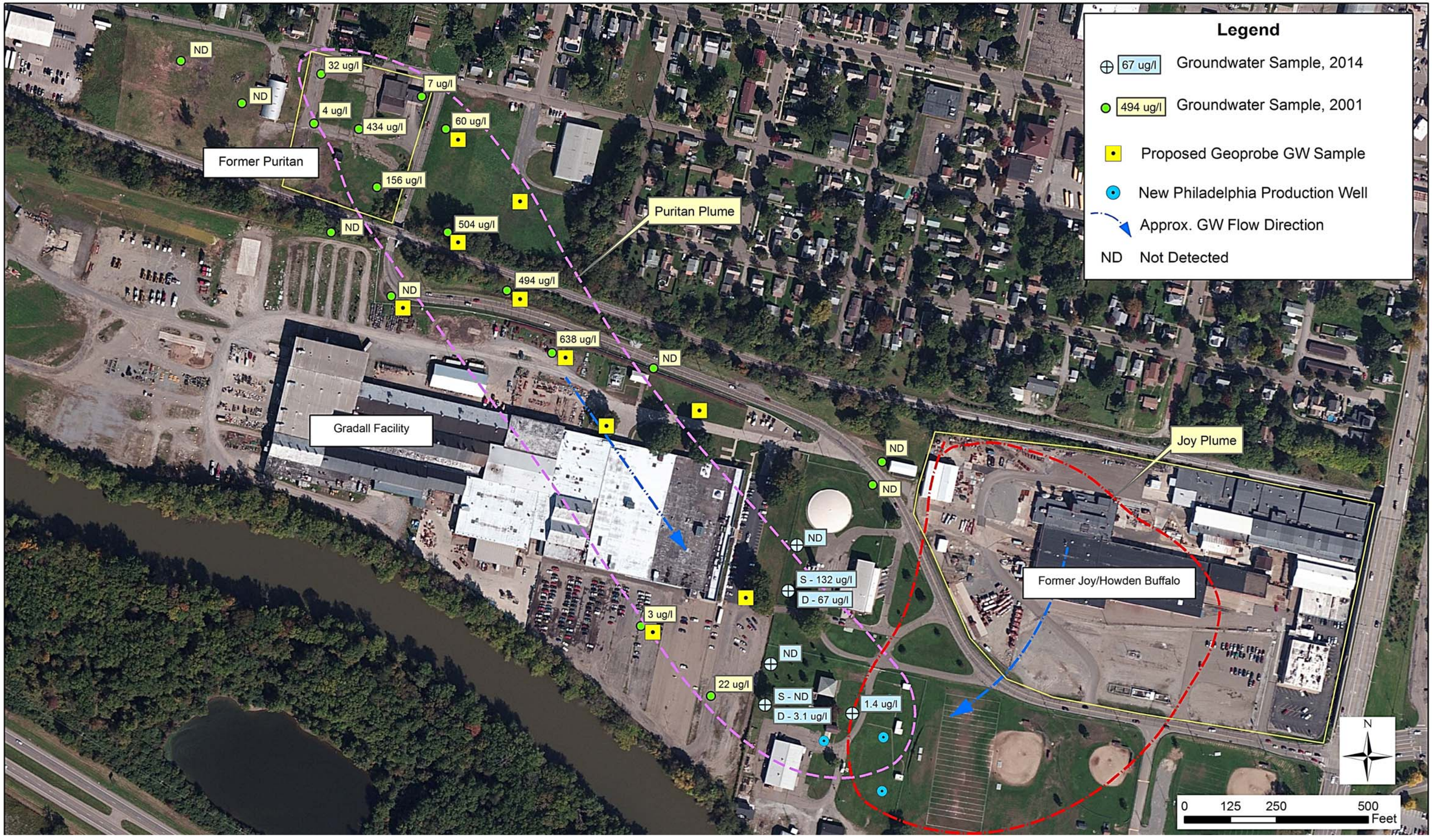


Figure 3: Puitan Laundry Previous Analytical Data 2001 and 2014 Source: Ohio EPA Southeast District Office Files

Ohio Environmental Protection Agency

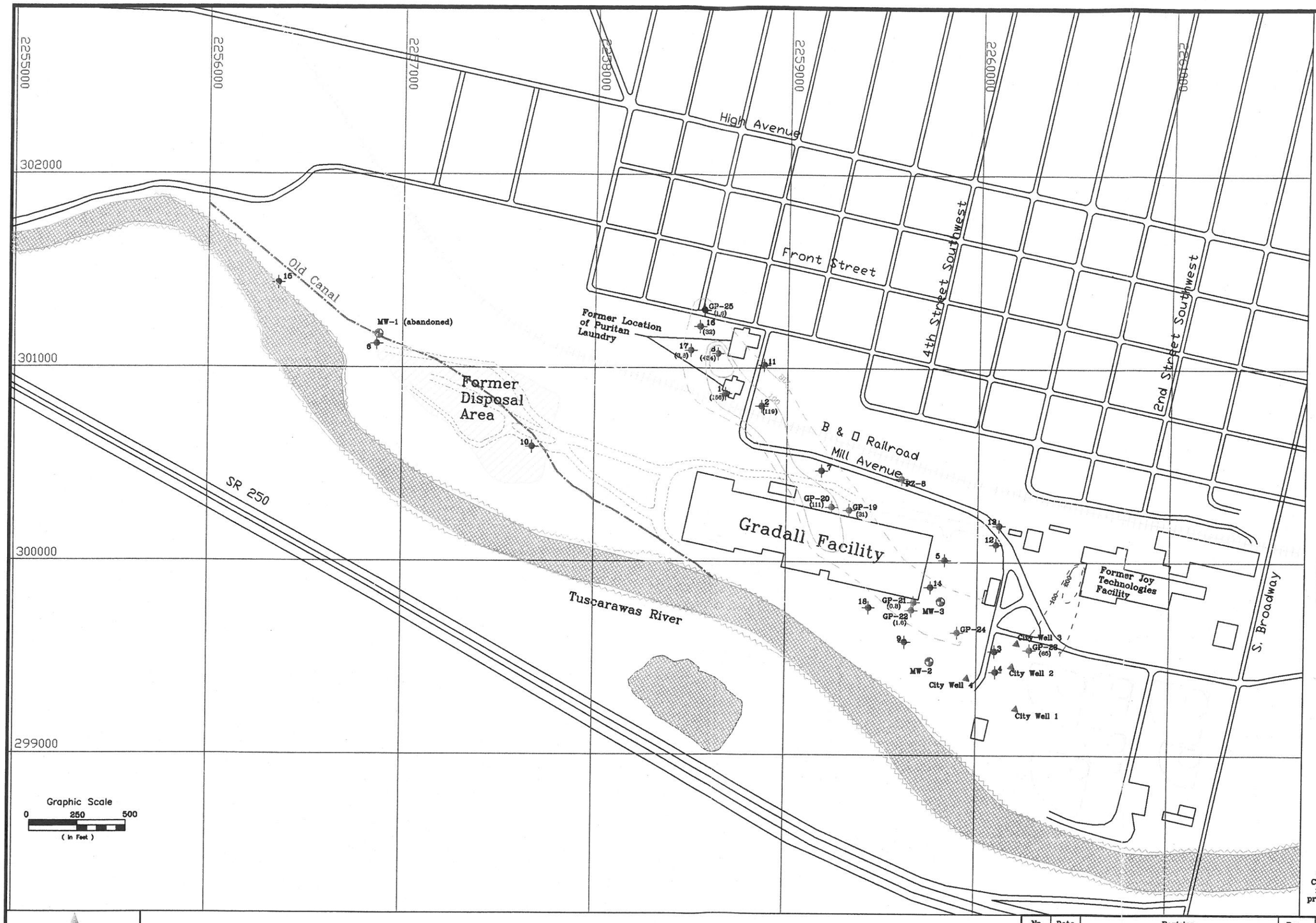
ESTIMATED EXTENT OF PCE PLUME

PURITAN LAUNDRY
NEW PHILADELPHIA, TUSCARAWAS CO.
(overlay on 1960 site features)

Figure 4: Puritan Laundry Estimated Extent for PCE Plume 1960

⊙ PCE Concentration in Groundwater, ug/l

0 250 500 750 Feet



PCE Results
Shallow Depth Interval
Approx. 860 – 840 ft AMSL

Sample Location	Sample Number	Sample Depth Interval, ft	Results, µg/Liter
PEN – 1	8.21-1-35	847-846	156
PEN – 2	8.21-2-23	850-849	119
PEN – 8	8.21-8-33	849-848	434
PEN – 16	8.21-16-35	847-846	32
PEN – 17	8.21-17-35	849-848	3.8
GP – 19	GP19-25	850-846	31
GP – 20	GP20-25	851-847	111
GP – 21	GP21-25	845-841	0.8
GP – 22	GP22-25	846-842	1.6
GP – 23	GP23-20	842-838	65
GP – 25	GP25-35	843-839	1.6

Gridlines are adjusted to the State Plane Coordinate System as of June 19, 2001. All maps printed prior to June 19, 2001 were printed using an arbitrary coordinate system.

Newphilly BASE2.dwg

PSARA TECHNOLOGIES, INC.

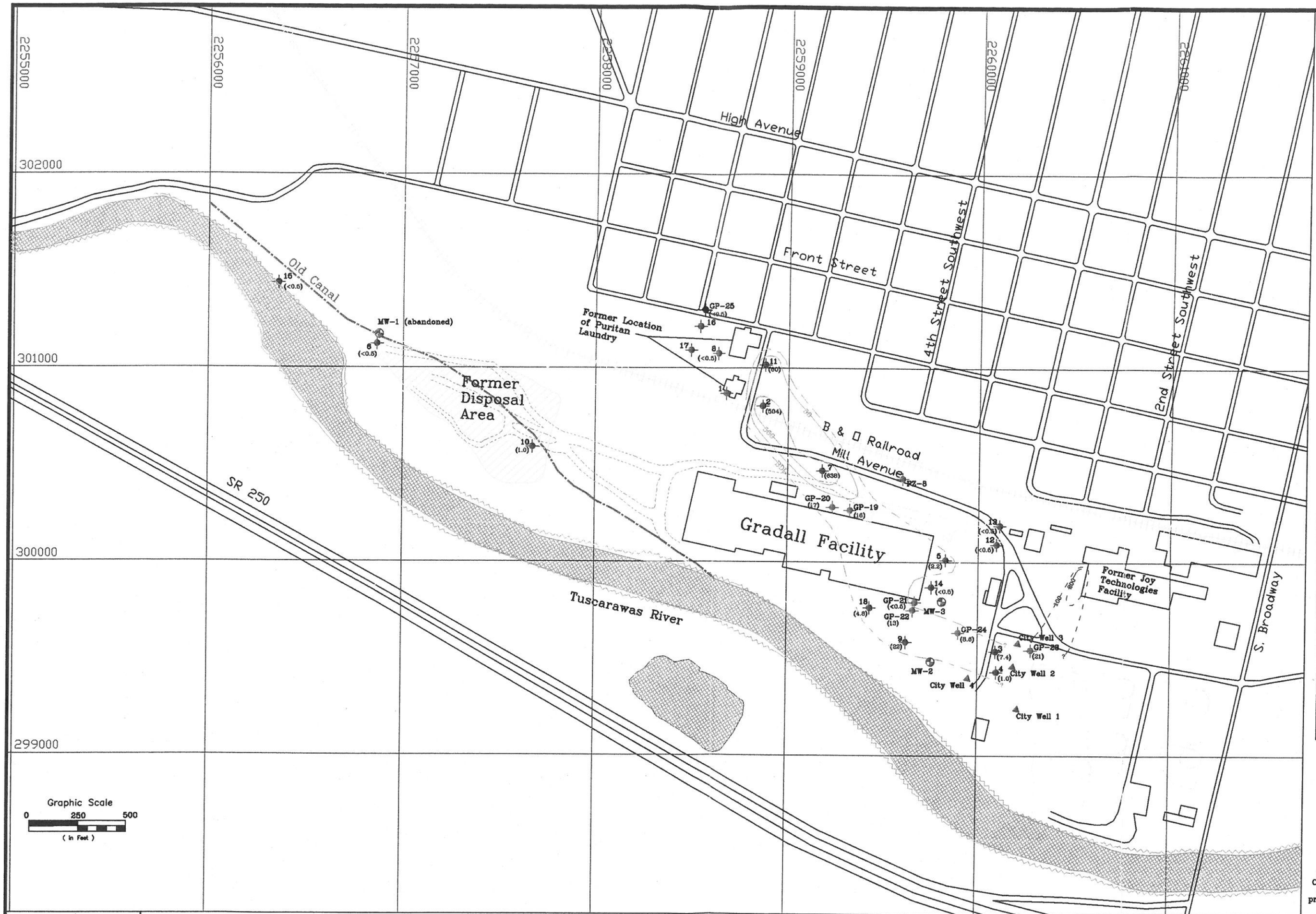
(<0.6) Sample result
Monitoring Well
City Production Well
Contaminant Contour
Old Canal
Penetrometer Groundwater Sampling Location
Geoprobe Groundwater Sampling Location

No.	Date	Revision	By
1	5/01	Input groundwater results	SAS
2	6/19	Adjust coordinates, input new sample locations	SWW

Ohio EPA

Figure 5.
PCE Results
Shallow Depth Elevations (850-840 ft)
West Plume Investigation
New Philadelphia, Ohio

Drawn By:	Date:	Scale:
SWW/SAS	7/06/01	1" = 500'



PCE Results
Intermediate Depth Interval
Approx. 840 – 825 ft AMSL

Sample Location	Sample Number	Sample Depth Interval, ft	Results, µg/Liter
PEN – 2	8.21-2-35	838–837	504
PEN – 3	8.21-3-35	829–828	7.4
PEN – 4	8.21-4-35	833–832	1.0
PEN – 5	8.21-5-34	837–836	2.2
PEN – 6	8.21-6-35	827–826	<0.5
PEN – 7	8.21-7-35	838–837	638
PEN – 8	8.21-8-44	838–837	<0.5
PEN – 9	8.21-9-35	829–828	22
PEN – 10	8.21-10-35	827–826	1.0
PEN – 11	8.21-11-35	836–835	60
PEN – 12	8.21-12-35	830–829	<0.5
PEN – 13	8.21-13-35	833–832	<0.5
PEN – 14	8.21-14-35	834–833	<0.5
PEN – 15	8.21-15-35	831–830	<0.5
PEN – 16	8.21-16-35	835–834	4.8
GP – 19	GP19-35	840–836	<0.5
GP – 19	GP19-45	830–826	16
GP – 20	GP20-35	841–837	17
GP – 20	GP20-45	831–827	3.1
GP – 21	GP21-35	835–831	<0.5
GP – 22	GP22-35	836–832	<0.5
GP – 22	GP22-45	826–822	13
GP – 23	GP23-35	827–823	21
GP – 24	GP24-35	834–830	8.6
GP – 25	GP25-45	833–829	<0.5

Gridlines are adjusted to the State Plane Coordinate System as of June 19, 2001. All maps printed prior to June 19, 2001 were printed using an arbitrary coordinate system.

Newphilly BASE2.dwg

PSARA TECHNOLOGIES, INC.

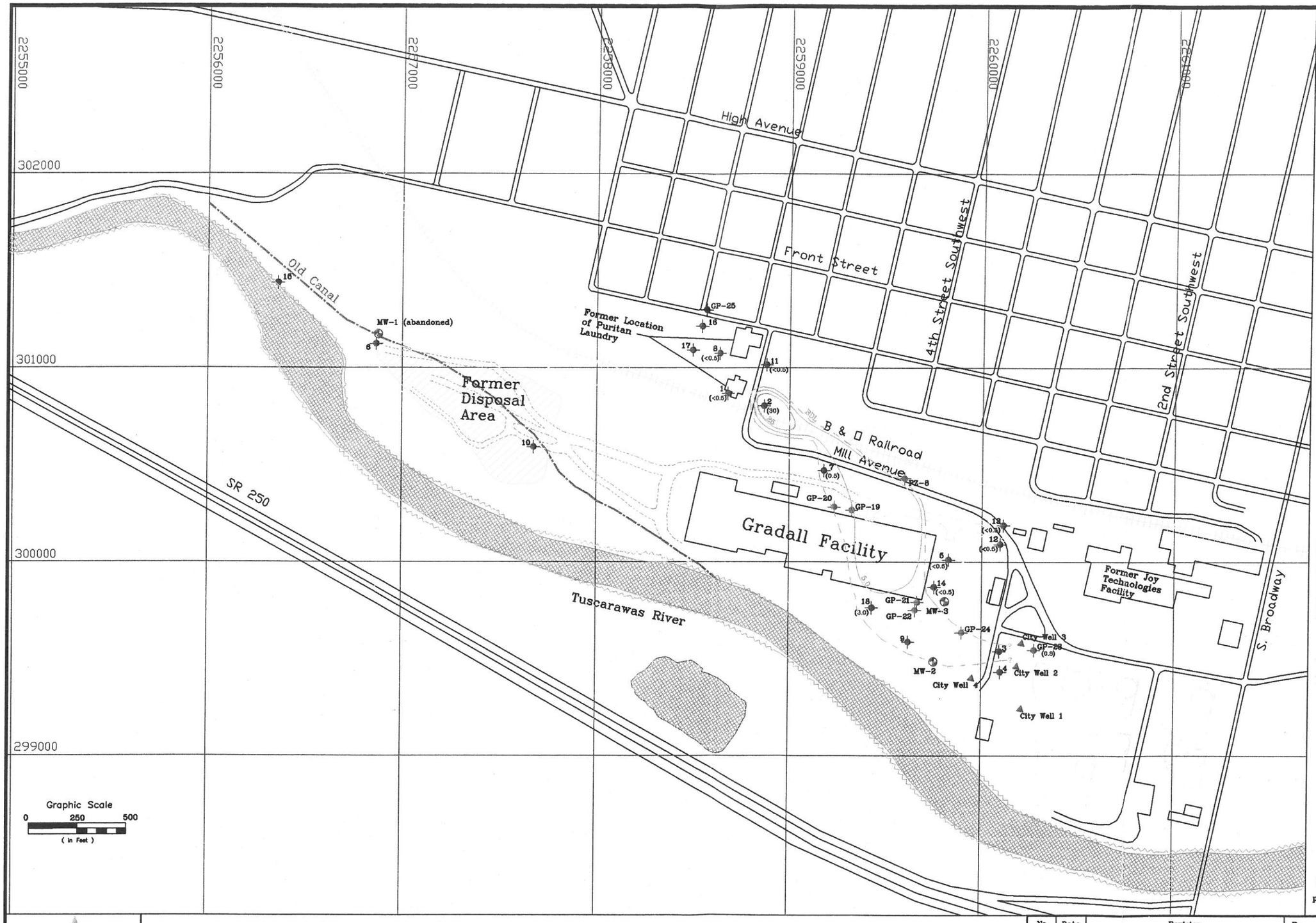
(<0.5) PCE sample result, ppb
Monitoring Well
City Production Well
Contaminant Contour
Old Canal
Penetrometer Groundwater Sampling Location
Geoprobe Groundwater Sampling Location

No.	Date	Revision	By
1	5/01	Input groundwater results	SAS
2	6/19	Adjust coordinates, input new sample locations	SWW

Ohio EPA

Figure 6. PCE Results
Intermediate Depth Elevations
(840–825 ft)
West Plume Investigation
New Philadelphia, Ohio

Drawn By:	Date:	Scale:
SWW/SAS	7/06/01	1" = 500'



PCE Results
Deep Depth Interval
820 – 800 ft AMSL

Sample Location	Sample Number	Sample Depth Interval, ft	Results, µg/Liter
PEN – 1	8.21–1–70	812–811	<0.5
PEN – 2	8.21–2–53	820–819	30
PEN – 2	8.21–2–70	803–802	0.9
PEN – 5	8.21–5–70	801–800	<0.5
PEN – 7	8.21–7–70	803–802	0.5
PEN – 8	8.21–8–70	812–811	<0.5
PEN – 11	8.21–11–55	816–815	<0.5
PEN – 11	8.21–11–70	801–800	<0.5
PEN – 12	8.21–12–55	810–809	<0.5
PEN – 13	8.21–13–55	813–812	<0.5
PEN – 14	8.21–14–55	814–813	<0.5
PEN – 18	8.21–18–55a	815–814	3.0
GP – 23	GP23–45	817–813	0.8

Gridlines are adjusted to the State Plane Coordinate System as of June 19, 2001. All maps printed prior to June 19, 2001 were printed using an arbitrary coordinate system.

Newphilly BASE2.dwg

PSARA TECHNOLOGIES, INC.

(<0.5) Sample result
Monitoring Well
City Production Well
Contaminant Contour
Old Canal
Penetrometer Groundwater Sampling Location
Geoprobe Groundwater Sampling Location

No.	Date	Revision	By
1	5/01	Input groundwater results	SAS
2	6/19	Adjust coordinates, input new sample locations	SWW

Ohio EPA

Figure 7.
PCE Results
Deep Depth Elevation (820–800 ft)
West Plume Investigation
New Philadelphia, Ohio

Drawn By:	Date:	Scale:
SWW/SAS	7/06/01	1" = 500'

Table 1 Groundwater Analytical Results
New Philadelphia West Plume Investigation
New Philadelphia, Ohio

Sample Number	8.21-1-35	8.21-1-70	8.21-1-70a	8.21-2-23	8.21-2-35	8.21-2-53	8.21-2-70	8.21-3-35	8.21-3-70	8.21-3-104	8.21-4-35	8.21-4-70	8.21-4-107	8.21-5-34	8.21-5-70	8.21-5-95	8.21-6-35	8.21-6-70	8.21-6-105
Depth Interval, ft (bgs)	34-35	69-70	69-70	22-23	34-35	52-53	69-70	34-35	69-70	103-104	34-35	69-70	106-107	33-34	69-70	94-95	34-35	69-70	104-105
Sample Elevation, ft AMSL	847-846	812-811	812-811	850-849	838-837	820-819	803-802	829-828	794-793	760-759	833-832	798-797	761-760	837-836	801-800	776-775	827-826	792-791	757-756
Volatile Organic Compounds, ug/L																			
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5	**12**	**8.1**	**9.8**	<0.5	**1.9**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	**0.5**	**0.5**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.8**	**0.5**	<0.5	**0.8**	<0.5	<0.5	<0.5	<0.5	<0.5
Bromofluorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5	**5.3**	**5.7**	**1.6**	<0.5	**1.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	**0.9**	**0.7**	**0.7**	**1.8**	**1.2**	**1.0**	**0.5**	**1.1**	**0.5**	<0.5	**1.9**	**0.7**	**0.6**	**2.4**	**0.6**	<0.5	**1.2**	**1.0**	**0.5**
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	**156**	<0.5	<0.5	**119**	**504**	**30**	**0.9**	**7.4**	**0.6**	<0.5	**1.0**	<0.5	<0.5	**2.2**	<0.5	<0.5	<0.5	<0.5	**4.1**
Total xylenes	**0.5**	<0.5	<0.5	**1.1**	**0.7**	**0.7**	<0.5	**0.5**	<0.5	<0.5	**0.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4 Trimethylbenzene	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.0**	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	**0.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Sample Number	8.21-7-35	8.21-7-35a	8.21-7-70	8.21-7-110	8.21-8-33	8.21-8-44	8.21-8-70	8.21-9-35	8.21-9-70	8.21-9-112	8.21-10-35	8.21-10-35a	8.21-10-70	8.21-10-102	8.21-11-35	8.21-11-55	8.21-11-70	8.21-12-35	8.21-12-55
Depth Interval, ft (bgs)	34-35	34-35	69-70	109-110	32-33	43-44	69-70	34-35	69-70	111-112	34-35	34-35	69-70	101-102	34-35	54-55	69-70	34-35	54-55
Sample Elevation, ft AMSL	838-837	838-837	803-802	763-762	849-848	838-837	812-811	829-828	794-793	752-751	827-826	827-826	792-791	760-759	836-835	816-815	801-800	830-829	810-809
Volatile Organic Compounds, ug/L																			
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**23**	**22**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**32**	**32**	<0.5	<0.5	**2.7**	<0.5	<0.5	<0.5	<0.5	<0.5	**6.6**	**6.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.3**	<0.5	<0.5	**27**	**25**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5	<0.5	<0.5	**1.4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	**1.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	**0.5**	<0.5	<0.5	**0.6**	**0.5**	<0.5	**0.7**	**0.5**	<0.5	**0.6**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromofluorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	**15**	**14**	<0.5	<0.5	<0.5	<0.5	<0.5	**6.1**	<0.5	<0.5	**72**	**68**	<0.5	<0.5	<0.5	**0.7**	<0.5	<0.5	<0.5
Toluene	**0.9**	**1.3**	**0.5**	<0.5	**1.4**	**1.0**	<0.5	**1.7**	**0.8**	<0.5	**1.2**	**1.2**	**0.7**	<0.5	**1.9**	**0.8**	**0.5**	**1.8**	**1.0**
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	**638**	**627**	**0.5**	<0.5	**434**	<0.5	<0.5	**22**	<0.5	<0.5	**1.0**	<0.5	<0.5	<0.5	**60**	<0.5	<0.5	<0.5	<0.5
Total xylenes	<0.5	**0.7**	<0.5	<0.5	**1.0**	**0.5**	<0.5	**1.0**	<0.5	<0.5	**0.6**	**0.6**	<0.5	<0.5	**1.2**	**0.5**	<0.5	**1.1**	**0.5**
1,2,4 Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	**22**	<0.5	**0.6**	**0.6**	<0.5	**2.6**	<0.5	<0.5	<0.5	**0.8**	**0.8**	**0.5**	<0.5	**0.8**	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

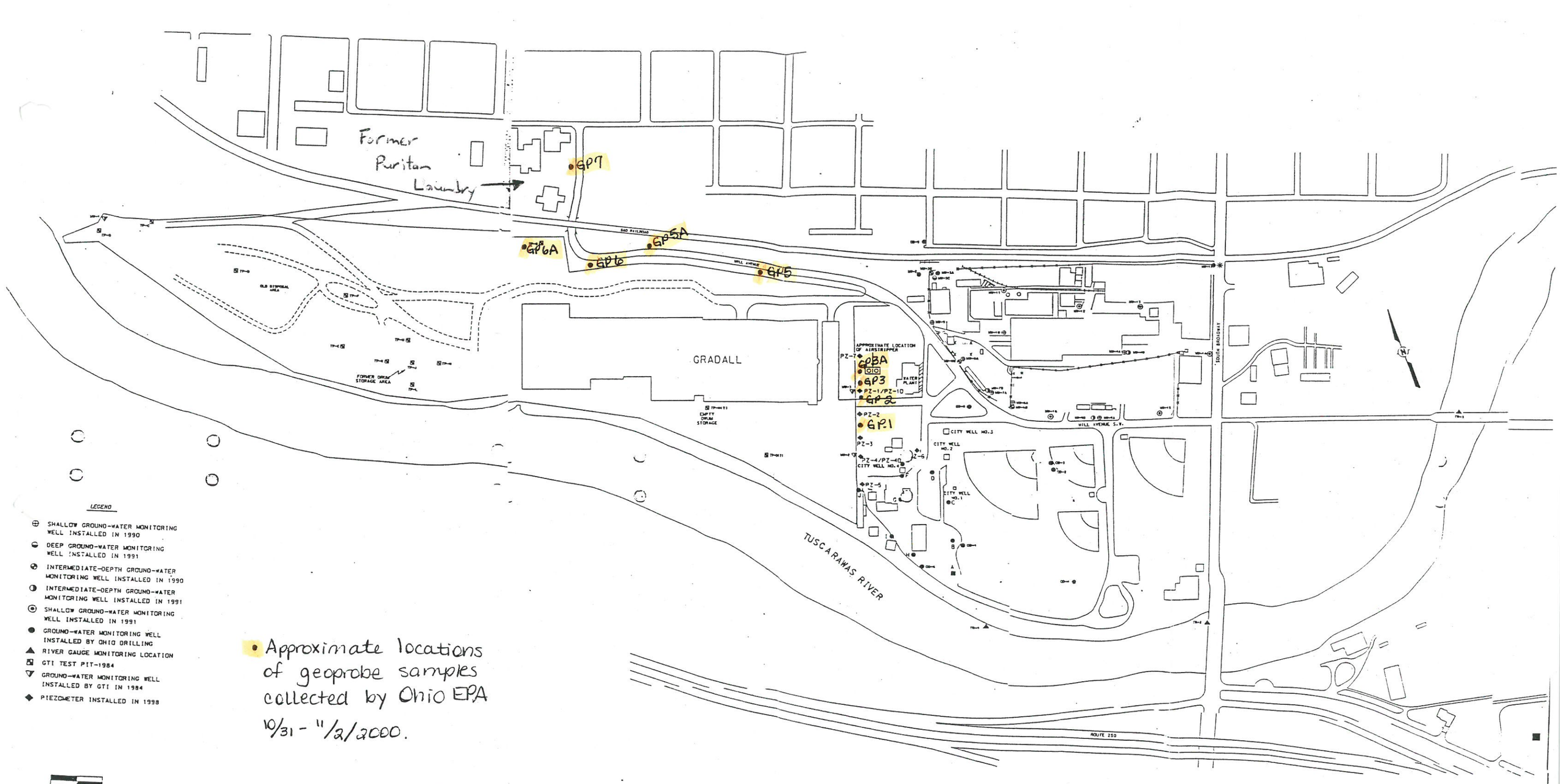
continued

Table 1 (continued). Groundwater Analytical Results
New Philadelphia West Plume Investigation
New Philadelphia, Ohio

Sample Number	8.21-12-70	8.21-13-35	8.21-13-55	8.21-13-70	8.21-14-35	8.21-14-55	8.21-14-70	8.21-14-70a	8.21-15-35	8.21-15-70	8.21-15-110	8.21-16-35	8.21-17-35	8.21-17-35a	8.21-18-35	8.21-18-55	8.21-18-55a	GP19-25	GP19-35
Depth Interval, ft (bgs)	69-70	34-35	54-55	69-70	34-35	54-55	69-70	69-70	34-35	69-70	109-110	34-35	34-35	34-35	34-35	54-55	54-55	21-25	31-35
Sample Elevation, ft AMSL	795-794	833-832	813-812	798-797	834-833	814-813	799-798	799-798	831-830	796-795	756-755	847-846	849-848	849-848	835-834	815-814	815-814	850-846	840-836
Volatile Organic Compounds, ug/L																			
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**11**	**24**
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.9**	<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	**0.5**	**0.5**	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	**0.7**	**0.5**	<0.5	<0.5	**0.5**	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5	**0.5**	**0.5**	**0.6**	<0.5	<0.5	**0.8**	<0.5
Bromofluorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5
Methylene chloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.4**	**0.7**
Trichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**4.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.1**	**9.2**
Toluene	**0.5**	**1.7**	**1.2**	<0.5	**1.0**	**1.4**	**0.5**	**0.7**	**1.5**	**0.5**	<0.5	**1.3**	**1.5**	**1.5**	**1.6**	<0.5	<0.5	**2.4**	**1.3**
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5	**<0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**32**	**3.8**	**3.7**	**4.8**	**2.9**	**3.0**	**31**	**351**
Total xylenes	<0.5	**1.0**	**0.7**	<0.5	**0.6**	**0.7**	<0.5	<0.5	**0.6**	<0.5	<0.5	**0.6**	**0.9**	**0.9**	**0.9**	<0.5	<0.5	**2.0**	**0.8**
1,2,4 Trimethylbenzene	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	**0.6**	**0.6**	<0.5	<0.5	**0.9**	**0.6**
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Sample Number	GP19-45	GP20-25	GP20-35	GP20-45	GP21-25	GP21-35	GP21-45	GP21-45a	GP22-25	GP22-35	GP22-45	GP23-20	GP23-35	GP23-45	GP24-35	GP24-35a	GP24-45	GP25-35	GP25-45
Depth Interval, ft (bgs)	41-45	21-25	31-35	41-45	21-25	31-35	41-45	41-45	21-25	31-35	41-45	16-20	31-35	41-45	31-35	31-35	41-45	31-33	41-45
Sample Elevation, ft AMSL	830-826	851-847	841-837	831-827	845-841	835-831	825-821	825-821	846-842	836-832	826-822	842-838	827-823	817-813	834-830	834-830	824-820	843-839	833-829
Volatile Organic Compounds, ug/L																			
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.9**	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**0.9**	**9.9**	**2.6**	<0.5	**6.4**	<0.5	**15**	<0.5	**2.3**	**2.6**	**2.2**	**116**	**12**	<0.5	**3.4**	**3.4**	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5	**2.0**	**0.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	**0.6**	**0.8**	**0.6**	<0.5	**0.6**	<0.5	**0.9**	<0.5	**0.6**	<0.5	**0.7**	**0.8**	<0.5	<0.5	**0.7**	<0.5	<0.5	**0.5**	<0.5
Bromofluorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**4.8**	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	<0.5	<0.5	**0.8**	<0.5	**0.7**	<0.5	<0.5	**0.5**	<0.5	<0.5	**0.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	<0.5	**3.6**	**1.0**	<0.5	**0.5**	<0.5	**5.0**	<0.5	**0.5**	<0.5	**1.8**	**349**	**275**	**23**	**1.1**	**1.2**	<0.5	<0.5	**2.5**
Toluene	**1.5**	**2.1**	**1.9**	<0.5	**1.9**	**1.1**	**2.3**	**0.9**	**1.7**	**1.1**	**2.0**	**1.8**	**1.1**	**1.0**	**1.9**	**1.2**	**0.5**	**1.3**	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.0**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	**16**	**111**	**17**	**3.1**	**0.8**	<0.5	**156**	<0.5	**1.6**	<0.5	**13**	**65**	**21**	**0.8**	**7.3**	**8.6**	<0.5	**1.6**	<0.5
Total xylenes	**0.9**	**1.1**	**1.0**	<0.5	**1.3**	**0.6**	**1.2**	**0.5**	**1.2**	**0.6**	**1.1**	**1.0**	**0.6**	**0.6**	**1.7**	**0.8**	<0.5	**0.9**	<0.5
1,2,4 Trimethylbenzene	**0.6**	**0.7**	**0.7**	<0.5	**0.9**	<0.5	**0.9**	<0.5	**0.8**	<0.5	**0.7**	**0.6**	<0.5	<0.5	**0.8**	**0.5**	<0.5	**0.5**	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

[a] Duplicate sample



• Approximate locations of geoprobe samples collected by Ohio EPA 10/31 - 11/2/2000.

Figure 8: Puritan Laundry - 2000 OEPA SIFU Geoprobe Study Sample Location Map

HMI Environmental Consulting Services
HydroSystems Management, Inc.
Glass Works Center - Suite 109
331 S. Main Street
Washington, Pennsylvania 15301

PROJECT NO.: HM00203	FILE NO:
DRAWING: 01028984	PLOT SIZE: 1"=200'
DRAFTED BY: JAW/EDA	DATE: 1/1/98
CHECKED BY: RLF/HM	DATE:
APPROVED BY: RLF/HM	DATE:
REVISION NO.:	DATE:

NEW PHILADELPHIA

BASEMAP
NEW PHILADELPHIA WELLFIELD SITE

FIGURE 2

Table 2 2000 OEPA SIFU Geoprobe Study
Summary of Laboratory Analytical Results
New Philadelphia, Ohio

Sample Location	Depth Interval, ft	Concentration, ug/l			
		Tetrachloroethene	Trichloroethene	1,2-Dichloroethene	Total Aromatic Hydrocarbons
GP-1	16 - 20	5.2	ND[a]	ND	ND
GP-1	36 - 40	ND	ND	ND	ND
GP-1	56 - 60	ND	ND	ND	ND
GP-2	16 - 20	65.6	ND	10.1	ND
GP-2	36 - 40	ND	ND	ND	ND
GP-2	56 - 60	ND	ND	ND	ND
GP-2	88 - 92	ND	ND	ND	ND
GP-3	16 - 20	18.8	ND	ND	ND
GP-3	36 - 40	ND	ND	ND	ND
GP-3	56 - 60	ND	ND	ND	ND
GP-3A	16 - 20	ND	ND	ND	ND
GP-3A	36 - 40	ND	ND	ND	ND
GP-3A	56 - 60	ND	ND	ND	ND
GP-5	16 - 20	ND	ND	ND	2
GP-5	36 - 40	ND	ND	ND	ND
GP-5	56 - 60	6.4	ND	ND	ND
GP-5A	16 - 20	20.6	ND	ND	ND
GP-5A	36 - 40	494	13	16.2	ND
GP-5A	56 - 60	ND	ND	ND	ND
GP-5A	88 - 92	ND	ND	ND	ND
GP-6	16 - 20	ND	ND	ND	ND
GP-6	36 - 40	ND	ND	ND	ND
GP-6	56 - 60	ND	ND	ND	ND
GP-6A	16 - 20	ND	ND	ND	ND
GP-6A	36 - 40	ND	ND	ND	ND
GP-6A	56 - 60	ND	ND	ND	ND
GP-6A	16 - 20	ND	ND	ND	ND
GP-7	16 - 20	7.2	ND	ND	ND
GP-7	36 - 40	ND	ND	ND	ND
GP-7	56 - 60	ND	ND	ND	ND
GP-7	78 - 82	ND	ND	ND	ND

[a] ND = non detect; not quantified above the laboratory detection limits.

Appendix B

Well Logs

Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Soil and Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: 9979082

View Image of Original Well Log

ORIGINAL OWNER AND LOCATION

Original Owner Name: *CITY OF NEW PHILADEL*

County: *TUSCARAWAS* **Township:** *GOSHEN* **Section Number:**

Address: **Lot Number:**

City: **State:** *OH* **Zip Code:**

Location Number: *16* **Location Map Year:** *1945* **Location Area:**

Latitude: *40.483310* **Longitude:** *-81.450191*

CONSTRUCTION DETAILS

Borehole Diameter: 1: **Borehole Depth: 1:** *196 ft.* **Depth to Bedrock:**

2: **2:**

Casing Diameter: 1: **Casing Length: 1:** **Casing Thickness: 1:**

2: **2:** **2:**

Casing Height Above Ground: **Aquifer Type:** *GRAVEL*

Date of Completion: *5/24/1946* **Total Depth:** *196 ft.* **Well Use:**

Driller's Name:

Screen Diameter: **Slot Size:** **Screen Length:**

Type: **Material:**

Set Between:

Gravel Pack Material/Size: **Vol/Wt Used:**

Method of Installation: **Placed:**

Grout Material/Size: **Vol/Wt Used:**

Method of Installation: **Placed**

WELL TEST DETAILS

Static Water Level: **Test Rate:** **Associated Reports**

Drawdown: **Test Duration:**

COMMENTS:

WELL LOG

Formations	From	To
CLAY	0	21
FINE GRAVEL	21	67
COARSE GRAVEL	67	103
COARSE GRAVEL	103	128
COARSE GRAVEL	128	163
COARSE SAND	163	172
COARSE GRAVEL	172	196

Printing Tips (opens in new window)

Print This Page | Return to County Search

Well log questions - Web site questions - Web policies

OHIO WATER SUPPLY BOARD

Well Record No. 16

79

Co. Tuscarawas Twp. Goshen 7 Sec.
Well Location Size
Map

Owner City of New Philadelphia Address
Driller Date

Well Head Elev. or M. P.
Elev. of Ground at Well

Pumping Test:

Static Level Date
Normal Pumpage

Quality Use

Adequacy of supply X = 2292500
Y = N 299000
1000 x 1000

Owner's Well No. or Other Designation Test well

Source of Data Dept. of health
Collected by CVY Date 5/24/46

9979082 STRATA	DEPTH From	DEPTH To
Clay	0	2005
Fine sharp gravel		66.17
Coarse sharp gravel		102.09
Coarse sharp gravel		127.47
Coarse gravel		162.55
Coarse sand		172.00
Coarse gravel		196.00

Layne Bowler Well
100' gravel packing

1921 inspection - located on N. bank of Tuscarawas River South of city.

Chemical analysis on file.

Literature indicates valley floor as 640'msl - 240' UN.

* Chief Aquifer

OHIO WATER RESOURCES BOARD

Well Record No. 330

Tuscarawas Co. Twp. Goshen Sec. 29 7

Well Location 1 block E. of sq. in Size 8" x 82'9"
sw Phila on S. side of St. Map Uhrichsville

Owner Elks Club Address New Philadelphia
Driller Everett Waltz and Co Date 9-1948

Well Head Elev. or M. P.
Elev. of Ground at Well

Pumping Test: 250 GPM

Static Level 42' Date 9-1948
Normal Pumpage

Quality Use

Adequacy of supply X = 2293700
Y = N 301 000
1000 x 1000

Owner's Well No. or Other Designation

Source of Data Driller
Collected by cb Date 1949

65756 STRATA	DEPTH From	DEPTH To
Gravel and sand	0	82'9"
3		
Perforated casing: 3000 holes Turbine pump Capacity - 125 GPM Depth of setting: 70'		

* Chief Aquifer

WELL LOG AND DRILLING REPORT

(351) ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

PLEASE USE PENCIL OR TYPEWRITER
DO NOT USE INK.

No. 345903

County Tuscarawas Township Goshen Section of Township

Owner City of New Philadelphia Address New Philadelphia Ohio

Location of property 800 Ft East of Tuscarawas River and 800 Ft North of Route 16

CONSTRUCTION DETAILS

Casing diameter 26" x 36 Length of casing 65'
Type of screen Stainless Length of screen 60'
Type of pump Deep Well Turbine
Capacity of pump Test
Depth of pump setting 60
Date of completion Nov 29-1966

BAILING OR PUMPING TEST

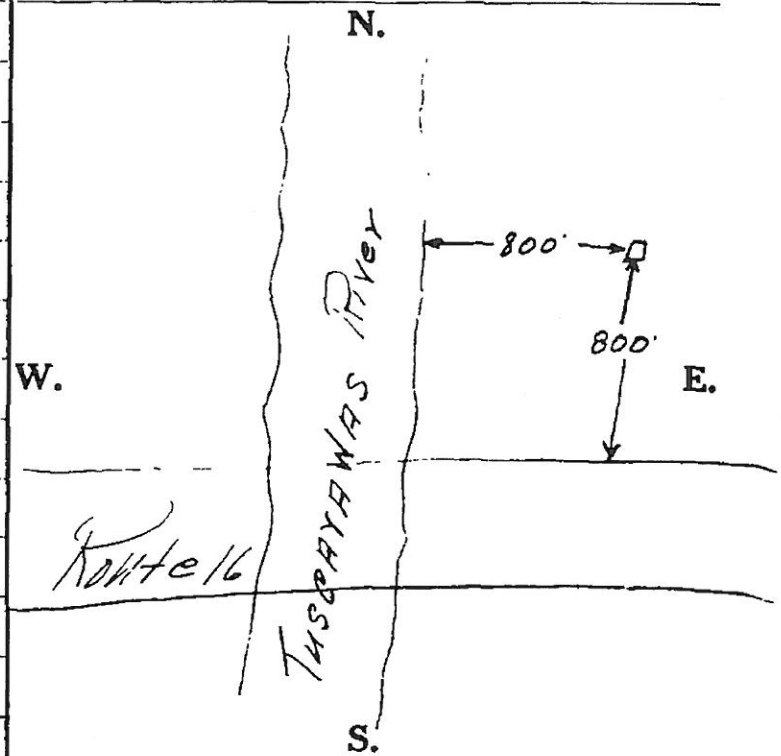
Pumping Rate 2000 G.P.M. Duration of test 8 hrs.
Drawdown 7' 1½" ft. Date Nov. 21-1966
Static level-depth to water 11 ft.
Quality (clear, cloudy, taste, odor)
Pump installed by H Dyer

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Clay + Sand	0 Feet	10 Ft.
Sand, Gravel + Clay	10	40 "
Sand + Gravel	40	75 "
Sand, Gravel + Little Clay	75	90 "
Sand + Gravel	90	120 "

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm The Ohio Drilling Co Date Nov. 30-1966
Address Massillon Ohio. Signed Jack Weisgarber

(154)

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

(351) ORIGINAL

PLEASE USE PENCIL OR TYPEWRITER
DO NOT USE INK

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

No 345907

County Tuscarawas Township Goshen Section of Township

Owner City of New Philadelphia Address New Philadelphia Ohio

Location of property 935 Ft East of Tuscarawas River & 800 North of Route 16

CONSTRUCTION DETAILS

Casing diameter 26"x36" Length of casing 65'
Type of screen Stainless Length of screen 60'
Type of pump Deep Well Turbine
Capacity of pump Test
Depth of pump setting 60'
Date of completion Feb 3 - 1967

BAILING OR PUMPING TEST

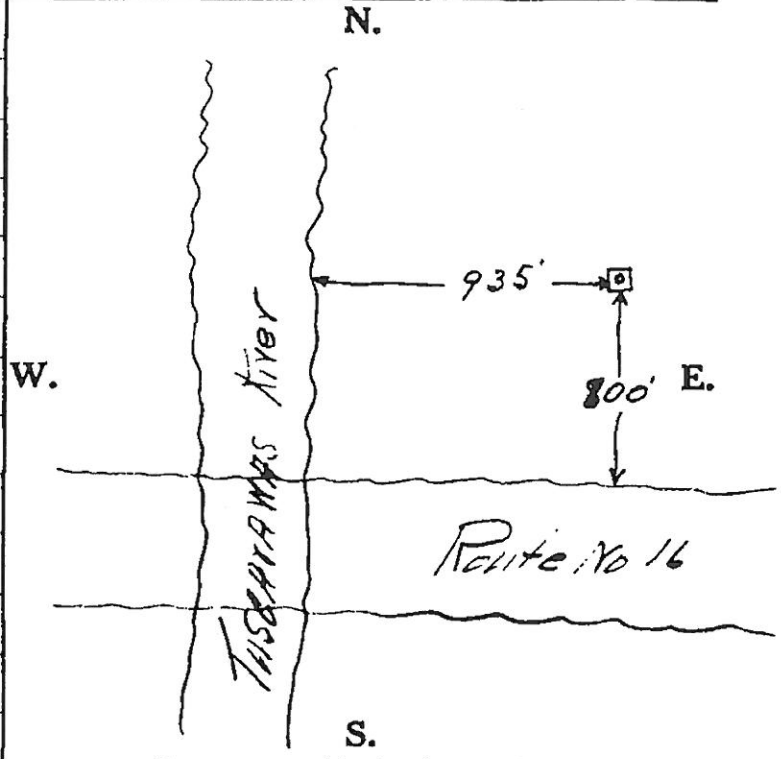
Pumping Rate 2000 G.P.M. Duration of test 8 hrs.
Drawdown 7' ft. Date Feb-1-1967
Static level-depth to water 11 ft.
Quality (clear, cloudy, taste, odor)
Pump installed by Herb Dyer

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Clay + Sand	0 Feet	10 Ft.
Sand Gravel + Clay	10	40 "
Sand + Gravel	40	75 "
Sand Gravel + Little Clay	75	90 "
Sand + Gravel	90	120 "

SKETCH SHOWING LOCATION

Locate in reference to numbered State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm The Ohio Drilling Co Date Feb. 6 - 1967
Address Massillon Ohio Signed J. H. Weingarten

*If additional space is needed to complete well log, use next consecutive numbered ~~form~~ (154)

DNR 7802.05e

WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources
Division of Water, 2045 Morse Road, Columbus, Ohio 43229-6605
Voice (614) 265-6740 Fax (614) 265-6767

Well Log Number: 2002688

Page 1 of 1 for this record.

WELL LOCATION

County TUSCARAWAS Township GOSHEN

OHIO DEPT. OF NATURAL RESOURCES
Owner/Builder

310 SW MILL AVE
Address of Well Location

City NEW PHILADELPHIA Zip Code +4

Permit No. ____ Section; ____ and/or Lot No. ____

Use of Well MONITOR

Coordinates of Well (Use only one of the below coordinate systems)

State Plane Coordinates

N ☐ X ____ +/- ____ ft.

S ☐ Y ____ +/- ____ ft.

Latitude, Longitude Coordinates

Latitude: 0 Longitude: 0

Elevation of Well in feet: ____ +/- ____ ft.

Datum Plane: ☐ NAD27 ☐ NAD83 Elevation Source ____

Source of Coordinates: GPS

Well location written description:

I-29

Comments on water quality/quantity and well construction:

WELL TEST *

Pre-Pumping Static Level 12 ft. Date 2/8/2006

Measured from GROUND LEVEL

Pumping test method AIR

Test Rate 500 gpm Duration of Test 0.5 hrs.

Feet of Drawdown 0 ft. Sustainable Yield 500 gpm

*(Attach a copy of the pumping test record, per section 1521.05, ORC)

Is Copy Attached? ☐ Yes ☒ No Flowing Well? ☐ Yes ☒ No

PUMP/PITLESS

Type of pump ____ Capacity ____ gpm

Pump set at ____ ft. Pitless Type ____

Pump installed by ____

I hereby certify the information given is accurate and correct to the best of my knowledge.

Drilling Firm FRONTZ DRILLING, INC.

Address 2031 MILLERSBURG RD

City, State, Zip WOOSTER OH 44691

Signed BRAD KITCHEN (Filed Electronically) Date 5/5/2006

ODH Registration Number 0120ODH

CONSTRUCTION DETAILS

Drilling Method: ROTARY

BOREHOLE/CASING (Measured from ground surface)

1 Borehole Diameter 10 inches Depth 115 ft.
Casing Diameter 6 in. Length 105 ft. Thickness 0.275 in.

2 Borehole Diameter ____ inches Depth ____ ft.
Casing Diameter ____ in. Length ____ ft. Thickness ____ in.

Casing Height Above Ground 3 ft.

Type 1: Steel
Type 2: ____

Joints 1: Threaded
Joints 2: ____

SCREEN

Diameter 6 in. Slot Size 0.05 in. Screen Length 10 ft.

Type CONTINOUS WIRE WOUND Material STAINLESS STEEL

Set Between 115 ft. and 105 ft.

GRAVEL PACK (Filter Pack)

Material/Size 1/4 x 3/8 Vol/Wt. Used 600 lbs.

Method of Installation Poured (gravity)

Depth: Placed From: 115 ft. To: 103 ft.

GROUT

Material Bentonite slurry Vol/Wt. Used 250 lbs.

Method of Installation Pumped w/Tremie pipe

Depth: Placed From: 103 ft. To: 0 ft.

DRILLING LOG*

FORMATIONS INCLUDE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.

Color	Texture	Formation	From	To
		FILL MATERIAL	0	8
		SANDGRAVELCLAY	8	16
		SAND AND GRAVEL	16	115

Aquifer Type (Formation producing the most water.) SAND AND GRAVEL

Date of Well Completion 2/8/2006 Total Depth of Well 115 ft.

Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.
Distribute copies of this record to Customer, and Local Health Deptartment.

Appendix C

Geographic Information System Data and Maps

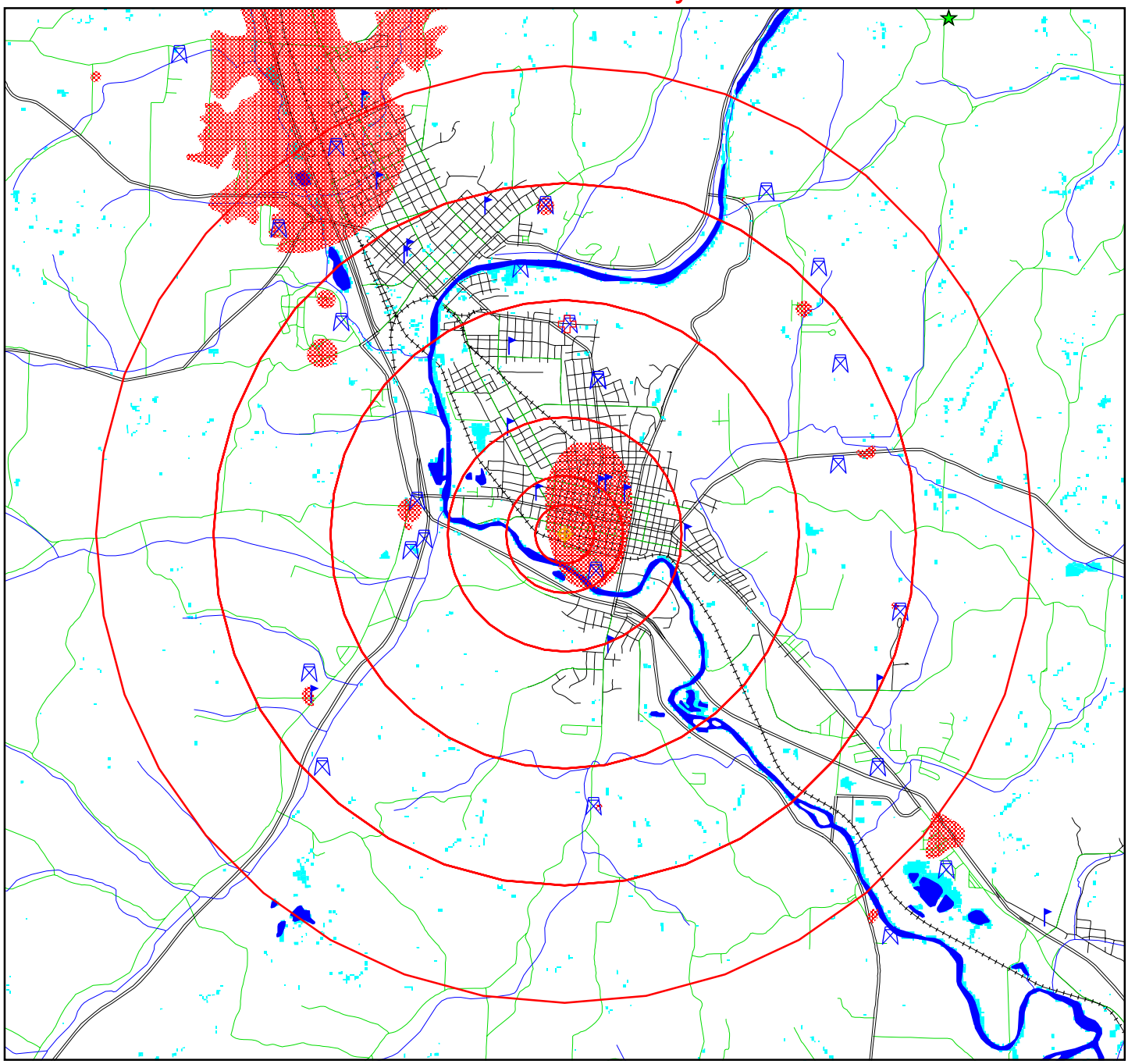
Ohio EPA

Division of Environmental Response & Revitalization

GEOGRAPHIC INFORMATION SYSTEM 4-MILE RADIUS MAP

Tuscarawas County -- POPULATION

Puritan Laundry



Site
School
Hospital
Public Surface Water Systems
Public Ground Water Systems
US Endangered/Threatened Species
Ohio Endangered/Threatened Species

Wetland Area
Lakes & Ponds
Wellhead Protection Area
Limit of Radius From Site
County Boundaries

Rivers & Streams
Railroad
State and Federal Highways
Local Roads
Municipal Roads

N

2 0 2 Miles

Puritan Laundry Site -- Population Data

RADIUS	TOTAL	WHITE	BLACK	INDIAN	ASIAN	HAWAII_PAC	OTHER	HOUSING
3.00 - 4.00	6442	6342	18	9	29	1	42	2512
2.00 - 3.00	7329	7115	95	8	29	6	76	2940
1.00 - 2.00	8616	8352	130	16	35	6	77	3770
0.50 - 1.00	4970	4822	42	11	15	3	76	2204
0.25 - 0.50	1766	1670	25	4	9	2	57	760
0.00 - 0.25	774	731	10	1	4	1	27	324
TOTAL =	29897	29032	320	49	121	19	355	12510

NOTE: 7,510 people live within a one-mile radius of the site.

NOTE: The Easting & Northing used for the site was a centroid, based on Preclaims data:
Easting (X) = 2258791.16 & Northing (Y) = 908113.44

[North Latitude of 40.488514º & West Longitude of -081.456483º; or,
40° 29' 18.22" N, -081° 27' 23.34" W.]

Puritan Laundry Site --
Public Water Supply Systems with
Ground Water or Surface Water Sources

Public Water Supplies with Ground Water Sources

ID_	PWS_ID	SYSTEM_TYPE	NAME	ADDRESS	CITY	STATE	DISTANCE	POPULATION *
1	7900812	Community	NEW PHILADELPHIA, CITY OF	310 MILL AVENUE, SW	NEW PHILADELPHIA	OH	0.4106	17056
2	7936412	Non-Community/Non-Transient	ALL-STATE TRUCK SALES	327 STONECREEK RD., NW	NEW PHILADELPHIA	OH	1.2019	48
3	7947112	Non-Community/Transient	EAGLE TRUCK PLAZA, LTD.	217 16TH ST. SE	NEW PHILADELPHIA	OH	1.2947	150
4	7940912	Non-Community/Non-Transient	DEPT. OF HUMAN SERVICES	247 STONECREEK RD. NW	NEW PHILADELPHIA	OH	1.3245	140
5	0335012	Non-Community/Transient	MWCD - CM PK. - CM5	1319 THIRD ST.,NW, P.O.BOX 349	NEW PHILADELPHIA	OH	1.3431	700
6	0343612	Non-Community/Transient	MWCD - EAGLE PT. - CM9	1319 THIRD ST.,NW, P.O.BOX 349	NEW PHILADELPHIA	OH	1.3431	500
7	7948112	Non-Community/Transient	UNION HOSPITAL	659 BOULEVARD	DOVER	OH	1.7933	110
8	7946812	Non-Community/Non-Transient	A.K. STEEL CORPORATION	303 OXFORD ST.	DOVER	OH	2.2988	130
9	7948512	Non-Community/Transient	CALVARY BAPTIST CHURCH	1507 OLD TOWN VALLEY RD., SE	NEW PHILADELPHIA	OH	2.3390	150
10	7936112	Non-Community/Transient	RED ONION	3673 DOVER-ZOAR RD., NE	DOVER	OH	2.4076	66
11	7950512	Non-Community/Transient	Faith Christian Church	2012 Pleasant Valley Rd., NE	NEW PHILADELPHIA	OH	2.4767	200
12	7942012	Non-Community/Non-Transient	YORK ELEMENTARY SCHOOL	938 STONE CREEK RD., SW	NEW PHILADELPHIA	OH	2.4843	180
13	7901912	Community	TCMSD - RIDGEWOOD	9962 WILKSHIRE BLVD.	BOLIVAR	OH	2.6307	498
14	7937812	Non-Community/Transient	DB Saloon (THE PLACE ON 39)	2397 STATE ROUTE 39, NE	NEW PHILADELPHIA	OH	2.7665	75
15	7947812	Non-Community/Non-Transient	GREER STEEL CO.	BOAT STREET	DOVER	OH	2.8115	130
16	7941012	Non-Community/Transient	Jerusalem Ch. (UNITED C.O.C.)	1417 STONE CREEK RD., SW	NEW PHILADELPHIA	OH	2.8719	200
17	7948212	Non-Community/Transient	SCHOENBRUNN AMPHITHEATER	P.O. BOX 450	NEW PHILADELPHIA	OH	2.9373	200
18	7934512	Non-Community/Transient	GREEN VALLEY GOLF CLUB	2673 PLEASANT VALLEY RD., NE	NEW PHILADELPHIA	OH	3.1440	100
19	7948812	Non-Community/Transient	STATE HIGHWAY PATROL POST	2454 E. HIGH AVENUE	NEW PHILADELPHIA	OH	3.3320	40
20	7932812	Non-Community/Transient	The Pointe Café (LA CANTINA)	3342 BLACKSNAKE HILL RD., NE	DOVER	OH	3.3930	70
21	7938312	Non-Community/Transient	REESE TRUCKING, INC.	3148 REESE RD., NW.	DOVER	OH	3.5754	40
22	7900412	Community	DOVER, CITY OF	WEST SEVENTEENTH ST.	DOVER	OH	3.8394	12826

Public Water Supplies with Surface Water Sources

ID_	PWS_ID	SYSTEM_SOURCE -- SYSTEM_TYPE	NAME	ADDRESS	CITY	STATE	DISTANCE	POPULATION *
1	7901711	Surface Water -- Community	TWIN CITY WATER & SEWER DIST.	1580 BOYD STREET	UHRICHSVILLE	OH	10.0107	9224
2	1038411	Surface Water -- Non-Community / Transient	MWCD - ATWOOD PARK	1319 THIRD ST., NW; P.O. BOX 349	NEW PHILADELPHIA	OH	11.2812	2400
3	1038311	Surface Water -- Non-Community / Non-Transient	MWCD - ATWOOD RESORT	1319 THIRD ST., NW; P.O. BOX 349	NEW PHILADELPHIA	OH	12.0318	315

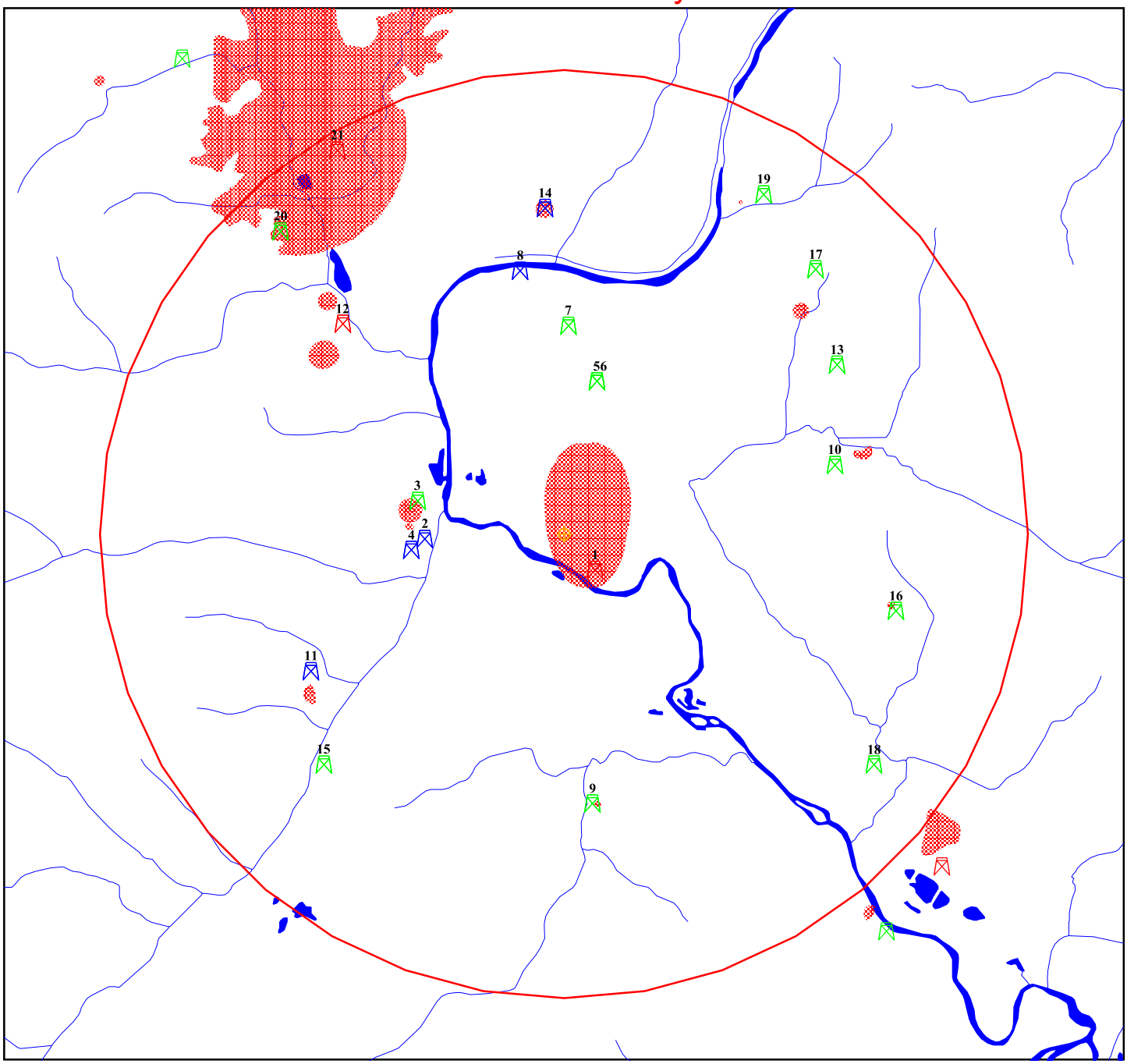
* = Population numbers updated with recent Ohio EPA--Drinking Water's PWS GIS Data

Division of Environmental Response & Revitalization

GEOGRAPHIC INFORMATION SYSTEM 4-MILE RADIUS MAP

PUBLIC GROUND WATER SYSTEMS

Puritan Laundry



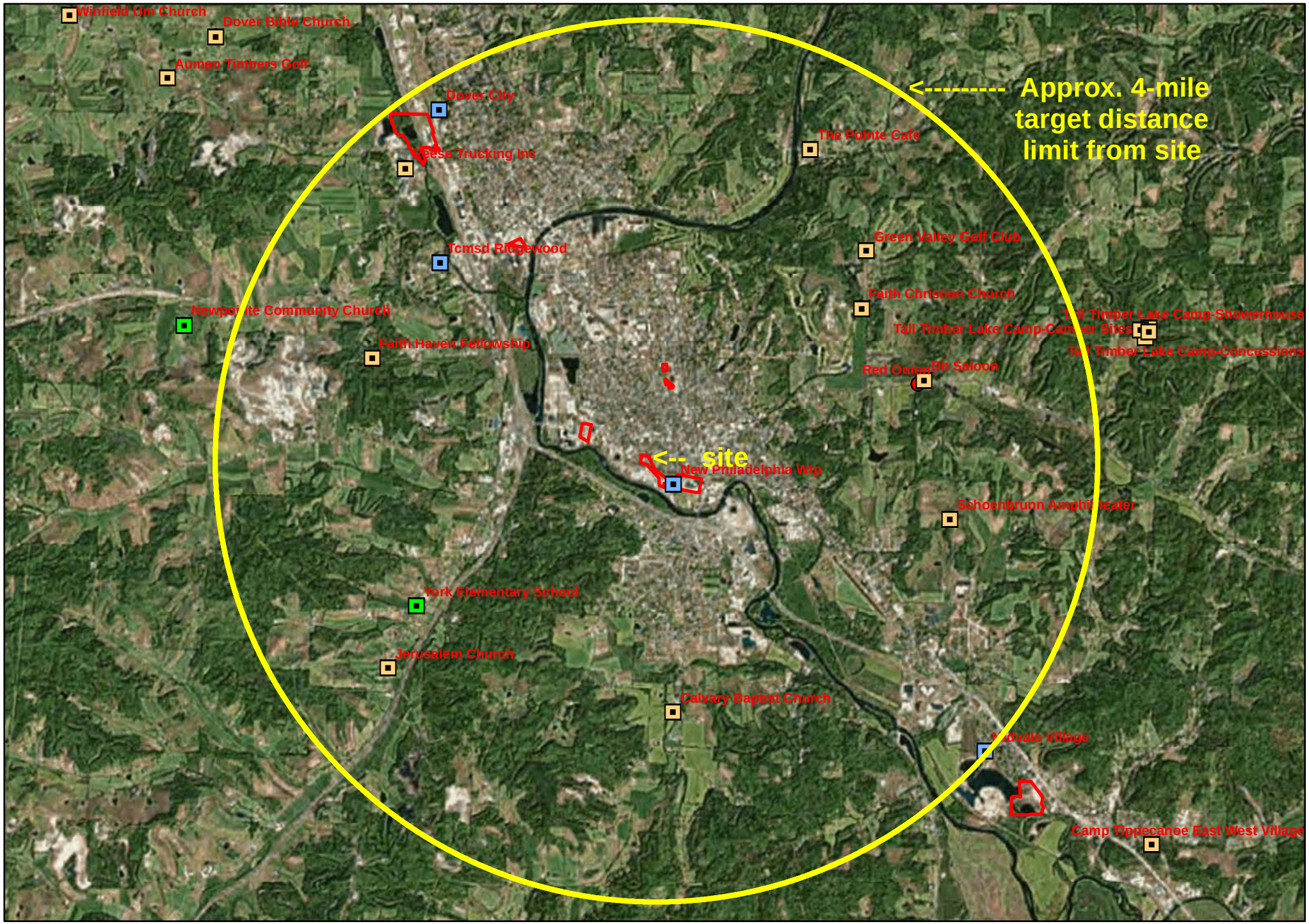
Site

Public Ground Water Systems
- Community
- Non-Community/Transient
- Non-Community/Non-Transient

Rivers & Streams
Wellhead Protection Area
Lakes & Ponds
Limit of Radius From Site
County Boundaries

1 0 1 Miles

N



Puritan Laundry Site -- New Philadelphia, Tuscarawas Co.
~4-mile Radius Map -- Updated with Recent DDAGW PWS Data

Ohio Environmental Protection Agency

0 5,000 10,000 20,000 Feet

1 inch = 1.14 miles

N W E S

Puritan Laundry Site -- Natural Heritage Data

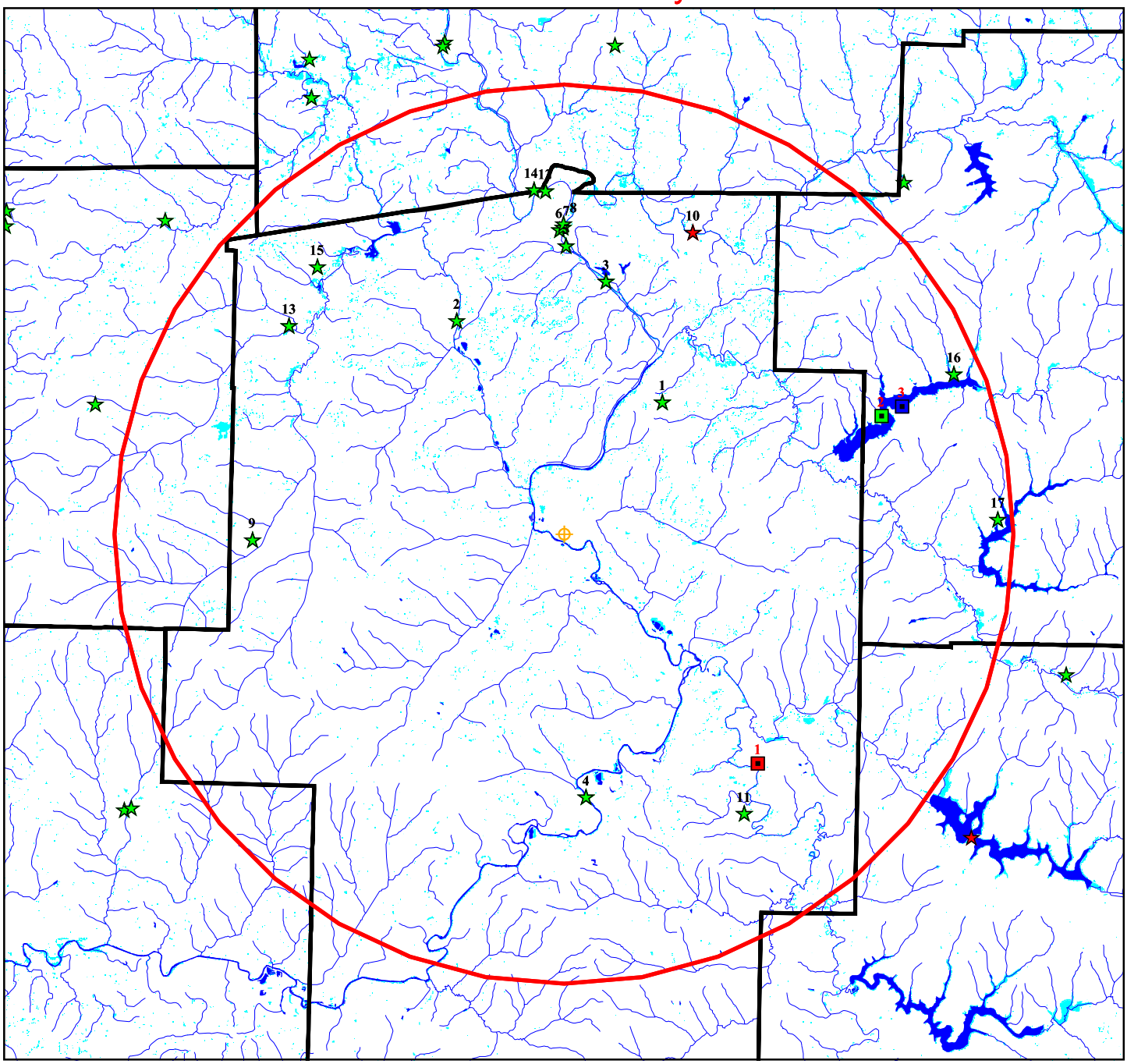
ID_	STATUS	DISTANCE [Miles]	SCI_NAME [Scientific Name]	COM_NAME [Common Name]
1	State Threatened	5.4960	BOTRYCHIUM MULTIFIDUM	LEATHERY GRAPE FERN
2	State Endangered	7.9915	CRYPTOBRANCHUS ALLEGANIENSIS	EASTERN HELLBENDER
3	State Endangered	8.5500	GOMPHUS EXTERNUS	PLAINS CLUBTAIL
4	State Endangered	8.7956	GOMPHUS EXTERNUS	PLAINS CLUBTAIL
5	State Threatened	9.6298	ASTER DRUMMONDII	DRUMMOND'S ASTER
6	State Threatened	10.1653	ASTER DRUMMONDII	DRUMMOND'S ASTER
7	State Threatened	10.2420	ASTER DRUMMONDII	DRUMMOND'S ASTER
8	State Threatened	10.3573	ASTER DRUMMONDII	DRUMMOND'S ASTER
9	State Threatened	10.4161	TYTO ALBA	BARN OWL
10	Federally Endangered	10.9557	PLEUROBEMA CLAVA	CLUBSHELL
11	State Threatened	11.0763	TYTO ALBA	BARN OWL
12	State Threatened	11.4799	ASTER DRUMMONDII	DRUMMOND'S ASTER
13	State Threatened	11.5339	CAREX SPRENGELII	SPRENGEL'S SEDGE
14	State Threatened	11.5412	ASTER DRUMMONDII	DRUMMOND'S ASTER
15	State Threatened	12.1557	CAREX SPRENGELII	SPRENGEL'S SEDGE
16	State Threatened	14.0566	CAREX RETROFLEXA VAR RETROFLEXA	REFLEXED SEDGE
17	State Threatened	14.4674	BOTRYCHIUM MULTIFIDUM	LEATHERY GRAPE FERN

Division of Environmental Response & Revitalization

GEOGRAPHIC INFORMATION SYSTEM 15-MILE RADIUS MAP

NATURAL HERITAGE DATA

Puritan Laundry



Site
US Endangered/Threatened Species
Ohio Endangered/Threatened Species

Public Surface Water Systems
Community
Non-Community/Transient
Non-Community/Non-Transient

Rivers & Streams
Wetland Area
Lakes & Ponds
Limit of Radius From Site
County Boundaries

N

4 0 4 8 Miles